

Package ‘fred’

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Title Access 'Federal Reserve Economic Data'

Version 0.1.2

Description Provides clean, tidy access to economic data from the 'Federal Reserve Economic Data' ('FRED') API <<https://fred.stlouisfed.org/docs/api/fred/>>. 'FRED' is maintained by the 'Federal Reserve Bank of St. Louis' and contains over 800,000 time series from 118 sources covering GDP, employment, inflation, interest rates, trade, and more. Dedicated functions fetch series observations, search for series, browse categories, releases, and tags, and retrieve series metadata. Multiple series can be fetched in a single call. Server-side unit transformations (percent change, log, etc.) and frequency aggregation are supported. Data is cached locally for subsequent calls. This product uses the 'FRED' API but is not endorsed or certified by the 'Federal Reserve Bank of St. Louis'.

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URL <https://github.com/charlescoverdale/fred>

BugReports <https://github.com/charlescoverdale/fred/issues>

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clear_cache	<i>Clear the fred cache</i>
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Description

Deletes all locally cached FRED data files. The next call to any data function will re-download from the FRED API.

Usage

```
clear_cache()
```

Value

Invisible NULL.

See Also

Other configuration: [fred_get_key\(\)](#), [fred_request\(\)](#), [fred_set_key\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
clear_cache()
options(op)
```

fred_category	<i>Get a FRED category</i>
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Description

Returns information about a single category. The FRED category tree starts at category 0 (the root) and branches into 8 top-level categories: Money, Banking & Finance; Population, Employment & Labor Markets; National Accounts; Production & Business Activity; Prices; International Data; U.S. Regional Data; and Academic Data.

Usage

```
fred_category(category_id = 0L)
```

Arguments

`category_id` Integer. The category ID. Default 0 (root).

Value

A data frame with category metadata.

See Also

Other categories: [fred_category_children\(\)](#), [fred_category_series\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
# Root category
fred_category()

# National Accounts (category 32992)
fred_category(32992)
options(op)
```

fred_category_children	<i>List child categories</i>
------------------------	------------------------------

Description

Returns the child categories for a given parent category.

Usage

```
fred_category_children(category_id = 0L)
```

Arguments

`category_id` Integer. The parent category ID. Default 0 (root).

Value

A data frame of child categories.

See Also

Other categories: [fred_category\(\)](#), [fred_category_series\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
# Top-level categories
fred_category_children()
options(op)
```

`fred_category_series` *List series in a category*

Description

Returns all series belonging to a given category. Automatically paginates through all results.

Usage

```
fred_category_series(category_id, limit = 1000L)
```

Arguments

`category_id` Integer. The category ID.
`limit` Integer. Maximum number of results to return. Default 1000.

Value

A data frame of series metadata.

See Also

Other categories: [fred_category\(\)](#), [fred_category_children\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_category_series(32992)
options(op)
```

fred_get_key	<i>Get the current FRED API key</i>
--------------	-------------------------------------

Description

Returns the API key set via [fred_set_key\(\)](#) or the FRED_API_KEY environment variable. Raises an error if no key is found.

Usage

```
fred_get_key()
```

Value

Character. The API key.

See Also

Other configuration: [clear_cache\(\)](#), [fred_request\(\)](#), [fred_set_key\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_get_key()
options(op)
```

fred_info	<i>Get metadata for a FRED series</i>
-----------	---------------------------------------

Description

Returns descriptive information about a series, including its title, units, frequency, seasonal adjustment, and notes.

Usage

```
fred_info(series_id)
```

Arguments

series_id Character. A single FRED series ID.

Value

A data frame with one row containing series metadata.

See Also

Other series: [fred_search\(\)](#), [fred_series\(\)](#), [fred_updates\(\)](#), [fred_vintages\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_info("GDP")
options(op)
```

fred_related_tags	<i>Find tags related to a given tag</i>
-------------------	---

Description

Returns tags that are frequently used together with the specified tag.

Usage

```
fred_related_tags(tag_names)
```

Arguments

tag_names Character. One or more tag names, separated by semicolons (e.g. "gdp", "usa;quarterly").

Value

A data frame of related tags.

See Also

Other tags: [fred_tags\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_related_tags("gdp")
options(op)
```

fred_releases	<i>List all FRED releases</i>
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Description

Returns all data releases available on FRED. A release is a collection of related series published together (e.g. "Employment Situation", "GDP").

Usage

```
fred_releases()
```

Value

A data frame of releases with columns including `id`, `name`, `press_release`, and `link`.

See Also

Other releases: [fred_release_dates\(\)](#), [fred_release_series\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_releases()
options(op)
```

fred_release_dates	<i>Get release dates</i>
--------------------	--------------------------

Description

Returns the dates on which data for a release were published. Useful for understanding the data calendar and when revisions occurred.

Usage

```
fred_release_dates(release_id)
```

Arguments

`release_id` Integer. The release ID.

Value

A data frame with columns `release_id` and `date`.

See Also

Other releases: [fred_release_series\(\)](#), [fred_releases\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_release_dates(53)
options(op)
```

fred_release_series *List series in a release*

Description

Returns all series belonging to a given release.

Usage

```
fred_release_series(release_id)
```

Arguments

release_id Integer. The release ID.

Value

A data frame of series metadata.

See Also

Other releases: [fred_release_dates\(\)](#), [fred_releases\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
# GDP release
fred_release_series(53)
options(op)
```

fred_request	<i>Make a raw request to the FRED API</i>
--------------	---

Description

Low-level function that sends a request to any FRED API endpoint and returns the parsed JSON as a list. Most users should use the higher-level functions such as [fred_series\(\)](#) or [fred_search\(\)](#).

Usage

```
fred_request(endpoint, ...)
```

Arguments

endpoint	Character. The API endpoint path (e.g. "series/observations").
...	Named parameters passed as query string arguments to the API.

Value

A list parsed from the JSON response.

See Also

Other configuration: [clear_cache\(\)](#), [fred_get_key\(\)](#), [fred_set_key\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_request("series", series_id = "GDP")
options(op)
```

fred_search	<i>Search for FRED series</i>
-------------	-------------------------------

Description

Searches the FRED database by keywords or series ID substring. Returns matching series with their metadata, ordered by relevance.

Usage

```
fred_search(
  query,
  type = "full_text",
  limit = 100L,
  order_by = "search_rank",
  filter_variable = NULL,
  filter_value = NULL,
  tag_names = NULL
)
```

Arguments

query	Character. Search terms (e.g. "GDP", "unemployment rate").
type	Character. Either "full_text" (default) for keyword search or "series_id" for series ID substring matching (supports * wildcards).
limit	Integer. Maximum number of results to return. Default 100, maximum 1000.
order_by	Character. How to order results. One of "search_rank" (default), "series_id", "title", "units", "frequency", "seasonal_adjustment", "last_updated", "popularity", "group_popularity".
filter_variable	Character. Optional variable to filter by. One of "frequency", "units", or "seasonal_adjustment".
filter_value	Character. The value to filter on (e.g. "Monthly", "Quarterly"). Required if filter_variable is specified.
tag_names	Character. Optional comma-separated tag names to filter results (e.g. "gdp", "usa;quarterly").

Value

A data frame of matching series with columns including id, title, frequency, units, seasonal_adjustment, last_updated, popularity, and notes.

See Also

Other series: [fred_info\(\)](#), [fred_series\(\)](#), [fred_updates\(\)](#), [fred_vintages\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
# Keyword search
fred_search("unemployment rate")

# Filter to monthly series only
fred_search("consumer price index", filter_variable = "frequency",
           filter_value = "Monthly")

# Search by series ID pattern
```

```
fred_search("GDP*", type = "series_id")
options(op)
```

fred_series	<i>Fetch observations for one or more FRED series</i>
-------------	---

Description

The main function in the package. Downloads time series observations from FRED and returns a tidy data frame. Multiple series can be fetched in a single call.

Usage

```
fred_series(
  series_id,
  from = NULL,
  to = NULL,
  units = "lin",
  frequency = NULL,
  aggregation = "avg",
  cache = TRUE
)
```

Arguments

series_id	Character. One or more FRED series IDs (e.g. "GDP", c("GDP", "UNRATE", "CPIAUCSL")).
from	Optional start date. Character ("YYYY-MM-DD") or Date.
to	Optional end date. Character ("YYYY-MM-DD") or Date.
units	Character. Unit transformation to apply. Default "lin" (levels). See Details.
frequency	Character. Frequency aggregation. One of "d" (daily), "w" (weekly), "bw" (biweekly), "m" (monthly), "q" (quarterly), "sa" (semiannual), "a" (annual), or NULL (native frequency, the default).
aggregation	Character. Aggregation method when frequency is specified. One of "avg" (default), "sum", or "eop" (end of period).
cache	Logical. If TRUE (the default), results are cached locally and returned from the cache on subsequent calls. Set to FALSE to force a fresh download from the API.

Details

FRED supports server-side unit transformations via the `units` argument. This avoids the need to compute growth rates or log transforms locally. Supported values:

- "lin" -levels (no transformation, the default)
- "chg" -change from previous period

- "ch1" -change from one year ago
- "pch" -percent change from previous period
- "pc1" -percent change from one year ago
- "pca" -compounded annual rate of change
- "cch" -continuously compounded rate of change
- "cca" -continuously compounded annual rate of change
- "log" -natural log

Value

A data frame with columns:

date Date. The observation date.

series_id Character. The FRED series identifier.

value Numeric. The observation value.

See Also

Other series: [fred_info\(\)](#), [fred_search\(\)](#), [fred_updates\(\)](#), [fred_vintages\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
# Single series
gdp <- fred_series("GDP")

# Multiple series
macro <- fred_series(c("GDP", "UNRATE", "CPIAUCSL"))

# With transformation: year-on-year percent change
gdp_growth <- fred_series("GDP", units = "pc1")

# Aggregate daily to monthly
rates <- fred_series("DGS10", frequency = "m")
options(op)
```

fred_set_key

Set the FRED API key

Description

Sets the API key used to authenticate requests to the FRED API. The key persists for the current R session. Alternatively, set the FRED_API_KEY environment variable in your .Renviron file.

Usage

```
fred_set_key(key)
```

Arguments

key Character. A 32-character FRED API key.

Details

Register for a free API key at <https://fredaccount.stlouisfed.org/apikeys>.

Value

Invisible NULL.

See Also

Other configuration: [clear_cache\(\)](#), [fred_get_key\(\)](#), [fred_request\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_set_key("your_api_key_here")
options(op)
```

fred_sources	<i>List all FRED data sources</i>
--------------	-----------------------------------

Description

Returns all data sources that contribute series to FRED. Sources include the Bureau of Labor Statistics, Bureau of Economic Analysis, Federal Reserve Board, U.S. Census Bureau, and over 100 others.

Usage

```
fred_sources()
```

Value

A data frame of sources with columns including id, name, and link.

See Also

Other sources: [fred_source_releases\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_sources()
options(op)
```

fred_source_releases *List releases from a source*

Description

Returns all releases published by a given data source.

Usage

```
fred_source_releases(source_id)
```

Arguments

source_id Integer. The source ID.

Value

A data frame of releases.

See Also

Other sources: [fred_sources\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
# Bureau of Labor Statistics
fred_source_releases(22)
options(op)
```

fred_tags	<i>List or search FRED tags</i>
-----------	---------------------------------

Description

Returns FRED tags, optionally filtered by a search query. Tags are keywords used to categorise series (e.g. "gdp", "monthly", "usa", "seasonally adjusted").

Usage

```
fred_tags(query = NULL, limit = 1000L)
```

Arguments

query	Character. Optional search string to filter tags.
limit	Integer. Maximum number of results. Default 1000.

Value

A data frame of tags with columns including name, group_id, notes, popularity, and series_count.

See Also

Other tags: [fred_related_tags\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_tags()
fred_tags("inflation")
options(op)
```

fred_updates	<i>List recently updated FRED series</i>
--------------	--

Description

Returns series that have been recently updated or revised.

Usage

```
fred_updates(limit = 100L)
```

Arguments

limit	Integer. Maximum number of results. Default 100, maximum 100.
-------	---

Value

A data frame of recently updated series.

See Also

Other series: [fred_info\(\)](#), [fred_search\(\)](#), [fred_series\(\)](#), [fred_vintages\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_updates()
options(op)
```

fred_vintages	<i>Get vintage dates for a FRED series</i>
---------------	--

Description

Returns the dates on which data for a series were revised. This is useful for real-time analysis and understanding data revisions.

Usage

```
fred_vintages(series_id)
```

Arguments

series_id Character. A single FRED series ID.

Value

A data frame with columns series_id and vintage_date.

See Also

Other series: [fred_info\(\)](#), [fred_search\(\)](#), [fred_series\(\)](#), [fred_updates\(\)](#)

Examples

```
op <- options(fred.cache_dir = tempdir())
fred_vintages("GDP")
options(op)
```

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